

REMARKS

In the Office Action, the Examiner rejects claims 1 and 3-5 under 35 U.S.C. § 102(e) as anticipated by FIJOLEK et al. (U.S. Patent No. 6,553,568); and rejects claims 6-31 and 34 under 35 U.S.C. § 103(a) as unpatentable over FIJOLEK et al. in view of ZADIKIAN et al. (U.S. Patent No. 6,912,221). Applicant traverses these rejections.¹

By way of the present amendment, Applicant cancels claim 9 without prejudice or disclaimer, and amends claims 1 and 8 to improve form. No new matter has been added by way of the present amendment. Claims 1, 3-8, 10-31 and 34 remain pending.

Claims 1 and 3-5 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by FIJOLEK et al. Applicant respectfully traverses this rejection.

Claim 1, as amended, recites a method of allocating upstream resources to a plurality of cable modems. The method includes grouping the plurality of cable modems into a plurality of groups based on quality of service requirements of each of the cable modems; ordering allocation of upstream resources to each of the plurality of cable modems based on the group to which each of the cable modems belongs; and allocating upstream resources to each of the cable modems based on the ordering. FIJOLEK et al. does not disclose or suggest this combination of features.

For example, FIJOLEK et al. does not disclose or suggest ordering allocation of upstream resources to each of a plurality of cable modems based on a group to which each of the cable modems belongs, and allocating upstream resources to each of the cable

¹ As Applicant's remarks with respect to the Examiner's rejections are sufficient to overcome these rejections, Applicant's silence as to assertions by the Examiner in the Office Action or certain requirements that may be applicable to such rejections (e.g., whether a reference constitutes prior art, motivation to combine reference, assertions as to dependent claims, etc.) is not a concession by Applicant that such assertions are accurate or such requirements have been met, and Applicant reserves the right to analyze and dispute such assertions/requirements in the future.

modems based on the ordering, as recited in amended claim 1. The Examiner relies on column 23, line 64 – column 24, line 28 of FIJOLEK et al. as allegedly disclosing these features (Office Action, pp. 2-3). Applicant respectfully disagrees with the Examiner's interpretation of FIJOLEK et al.

At column 23, line 64 – column 24, line 28, FIJOLEK et al. discloses:

In one exemplary preferred embodiment of the present invention, the configuration files specify at least a Maximum Rate Limit ("MRL") for both a downstream and an upstream connection based on a respective CoS policy for a service level agreement. In one preferred embodiment of the present invention, the CMTS 12 to CM 16 or CPE 18, CoS capability is limited to enforcement of maximum bit rates. Since upstream CoS policy enforcement also depends on this downstream rate limitation interaction, the same bandwidth rate is used for upstream CIR and MBR. However, in another preferred embodiment of the present invention, the CoS policy enforcement is not limited only to enforcement of MBR and a separate list of upstream and downstream limits can also be enforced. Table 20 illustrates a list of exemplary configuration files created at Step 160.

At Step 164, the MRL and other CoS or QoS bandwidth information from the configuration files is loaded in the cable access router 144. The cable access router 144 uses the CoS or QoS information to enforce the MRLs for a desired service level agreement between the CMTS 12 and CMs 16 or CPEs 18. includes setting one or more parameters for class-of-service or quality-of-service for the desired service level agreement.

This section of FIJOLEK et al. discloses specifying a Maximum Rate Limit (MRL) for a downstream and an upstream connection based on a policy for a service level agreement.

This section of FIJOLEK et al. further discloses that a cable access router enforces the MRLs for a desired service level agreement between the cable modem termination system and the cable modems. This section of FIJOLEK et al. does not mention ordering an allocation of resources. Instead, this section of FIJOLEK et al. merely discloses specifying a maximum rate limit for a connection. Therefore, this section of FIJOLEK does not disclose or suggest ordering allocation of upstream resources to each of a plurality of cable modems based on a group to which each of the cable modems belongs,

and allocating upstream resources to each of the cable modems based on the ordering, as recited in claim 1.

For at least the foregoing reason, Applicant submits that claim 1 is not anticipated by FIJOLEK et al.

Claims 3-5 depend from claim 1. Therefore, claims 3-5 are not anticipated by FIJOLEK et al. for at least the reasons given above with respect to claim 1.

Claims 6-8, 10-31 and 34 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over FIJOLEK et al. in view of ZADIKIAN et al. Applicant respectfully traverses this rejection.

Claims 6 and 7 depend from claim 1. The disclosure of ZADIKIAN et al. does not remedy the deficiencies in the disclosure of FIJOLEK et al. set forth above with respect to claim 1. Therefore, claims 6 and 7 are patentable over FIJOLEK et al. and ZADIKIAN et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 1.

Independent claim 8 recites a cable modem termination system (CMTS). The CMTS includes a memory configured to store instructions; and a processing unit configured to execute the instructions in the memory to: group a plurality of cable modems (CMs) into a plurality of groups based on quality of service requirements of each of the cable modems, re-boot the CMTS, and determine an order for allocating upstream resources to each of the plurality of CMs based on the group to which each of the CMs belongs. FIJOLEK et al. and ZADIKIAN et al., whether taken alone or in reasonable combination, do not disclose or suggest this combination of features.

For example, FIJOLEK et al. and ZADIKIAN et al. do not disclose or suggest a processing unit configured to execute instructions in the memory to determine an order for allocating upstream resources to each of a plurality of CMs based on a group to which each of the CMs belongs. The Examiner relies on column 6, lines 15-22 of ZADIKIAN et al. as allegedly disclosing this feature (Office Action, pg. 4). Applicants respectfully disagree with the Examiner's interpretation of ZADIKIAN et al.

At column 6, lines 15-22, ZADIKIAN et al. discloses:

In cases where there is insufficient bandwidth to satisfy all failed connections, the protocol, in one embodiment, uses a quality of service (QoS) metric to prioritize the restoration sequence. In such embodiment, connections with the highest QoS are restored first, followed, in a descending order, by those with a lower QoS, until either all connections have been restored or all available bandwidth has been used.

This section of ZADIKIAN et al. discloses restoring connections with a highest quality of service first, followed, in descending order, by those with a lower quality of service, until either all connections have been restored or all available bandwidth has been used. This section of ZADIKIAN et al. discloses restoring failed connections based on quality of service, not a processing unit configured to execute instructions in the memory to determine an order for allocating upstream resources to each of a plurality of CMs based on a group to which each of the CMs belongs, as recited in claim 8.

The disclosure of FIJOLEK et al. does not remedy the deficiencies in the disclosure of ZADIKIAN et al. set forth above.

For at least the foregoing reasons, Applicant submits that claim 8 is patentable over FIJOLEK et al. and ZADIKIAN et al., whether taken alone or in any reasonable combination.

Claims 10-14 depend from claim 8. Therefore, claims 10-14 are patentable over FIJOLEK et al. and ZADIKIAN et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 8.

Independent claim 15 recites a method of allocating upstream resources in a cable modem system. The method includes receiving upstream resource requests from a plurality of cable modems, each of the resource requests comprising an address associated with a cable modem of the plurality of cable modems; determining an order that the upstream resources are to be assigned to each of the plurality of cable modems based on the address of each of the resource requests; and allocating the upstream resources based on the determined order. FIJOLEK et al. and ZADIKIAN et al., whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, FIJOLEK et al. and ZADIKIAN et al. do not disclose or suggest determining an order that the upstream resources are to be assigned to each of a plurality of cable modems based on an address of each of the resource requests. The Examiner relies on column 6, lines 15-22 of ZADIKIAN et al. as allegedly disclosing this feature (Office Action, pg. 5). Applicant respectfully disagrees with the Examiner's interpretation of ZADIKIAN et al.

Column 6, lines 15-22 of ZADIKIAN et al. has been reproduced above. This section of ZADIKIAN et al. discloses restoring connections with a highest quality of service first, followed, in descending order, by those with a lower quality of service, until either all connections have been restored or all available bandwidth has been used. This section of ZADIKIAN et al. discloses restoring failed connections based on quality of

service, not determining an order that the upstream resources are to be assigned to each of a plurality of cable modems based on an address of each of the resource requests, as recited in claim 15. In fact, this section of ZADIKIAN et al. does not even mention a resource request.

The disclosure of FIJOLEK et al. does not remedy the deficiencies in the disclosure of ZADIKIAN et al. set forth above.

For at least the foregoing reasons, Applicant submits that claim 15 is patentable over FIJOLEK et al. and ZADIKIAN et al., whether taken alone or in any reasonable combination.

Claims 16-19 depend from claim 15. Therefore, claims 16-19 are patentable over FIJOLEK et al. and ZADIKIAN et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 15.

Claims 20 and 25 recite features similar to, yet possibly of different scope than, features recited above with respect to claim 15. Therefore, claims 20 and 25 are patentable over FIJOLEK et al. and ZADIKIAN et al., whether taken alone or in any reasonable combination, for at least reasons similar to the reasons given above with respect to claim 15.

Claims 21-23 depend from claim 20. Therefore, claims 21-23 are patentable over FIJOLEK et al. and ZADIKIAN et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 20.

Claims 26-31 depend from claim 25. Therefore, claims 26-31 are patentable over FIJOLEK et al. and ZADIKIAN et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 25.

Claim 34 recites features similar to, yet possibly of different scope, than features recited above with respect to claim 8. Therefore, claim 34 is patentable over FIJOLEK et al. and ZADIKIAN et al., whether taken alone or in any reasonable combination, for at least reasons similar to the reasons given above with respect to claim 8.

In view of the foregoing amendments and remarks, Applicant respectfully requests the Examiner's reconsideration of this application, and the timely allowance of the pending claims.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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